TECHNICAL MEMORANDUM

To: Ethan Finkel
From: Richard Sugatt
Date: September 18, 2019
RE: Revision of irrigation groundwater PRG for hexavalent chromium in the 2019 Record of Decision for Walton & Lonsbury Superfund Site ("Site")

The purpose of this memorandum is to clarify the change of the irrigation groundwater Preliminary Remedial Goal (PRG) from 100 micrograms per liter (µg/L) hexavalent chromium in the Feasibility Study (FS) and Proposed Plan to 31 µg/L in the Record of Decision (ROD).

The risk-based hexavalent chromium PRG for groundwater used as irrigation water was based on recreational use of a swimming pool filled with Site groundwater. This exposure scenario was considered to be the most intensive yet realistic irrigation use scenario at the Site. The risk for this exposure scenario was quantified using the EPA Regional Screening Level (RSL) calculator for a recreational swimmer receptor exposed to surface water. The site-specific exposure assumptions were:

- Exposure duration – 20 years (adult) and 6 years (child);
- Exposure frequency – 52 days/year (adult) and 65 days/year (child);
- Exposure time – 1 hour/event (adult) and 2 hours/event (child);
- Event frequency – 1 event/day (adult and child);
- Skin surface area – 19,652 cm^2 (adult) and 6,365 cm^2 (child); and
- Water ingestion rate – 0.05 L/hour (adult) and 0.1 L/hour (child).

The RSL was calculated to be 0.307 µg/L for an Incremental Lifetime Cancer Risk (ILCR) of 1E-06. Using this result, the risk-based concentrations for hexavalent chromium were 0.307 µg/L for an ILCR = 1E-06, 3.07 µg/L for an ILCR = 1E-05, and 30.7 µg/L for an ILCR = 1E-04. The selected PRG should be 30.7 µg/L, rounded to 31 µg/L, based on an ILCR on the order of 10^{-4}, which is within the EPA acceptable cancer risk range of 10^{-6} to 10^{-4}. The PRG in the FS and Proposed Plan was set at 100 µg/L, which is consistent with the Maximum Contaminant Level (MCL) for chromium, which is 100 µg/L. This MCL is based on total chromium, without regard to whether the chromium is in the trivalent or more toxic hexavalent form. During review of the draft ROD, it was determined that the MCL is not applicable to this area of the Site because the groundwater is classified as non-potable. Therefore, it was determined that the PRG should be risk-based and without regard to the chromium MCL. As a result, the PRG was changed from 100 µg/L to 31 µg/L in the final ROD.